



Distributed Sound and Light Array Fact Sheet



<http://jnlwp.defense.gov>

Non-lethal weapons provide our operating forces with escalation-of-force options that minimize casualties and collateral damage.

What Is It?

Sponsored by the Joint Non-Lethal Weapons Program, the Distributed Sound and Light Array (DSLAs) is a non-lethal acoustical and optical device that provides hailing and warning capabilities. Still in the developmental stage, the DSLA uses the combined effects of two integrated sensory stimulators: a distributed, high-output, phased acoustic array and a distributed, high-output, coherent (laser)/non-coherent (bright white light) optical array.

As part of the DSLA's hailing and warning capabilities, the DSLA's light array attracts the attention of the target, while the sound array conveys specific instructions to the target. The DSLA is especially well-suited for hailing and warning vehicle and vessel operators. At night, the DSLA can severely degrade an individual's ability to perform threatening tasks. Similarly, the DSLA can provide additional escalation-of-force options by assisting in clearing individuals from a given area, managing crowds and providing area denial.



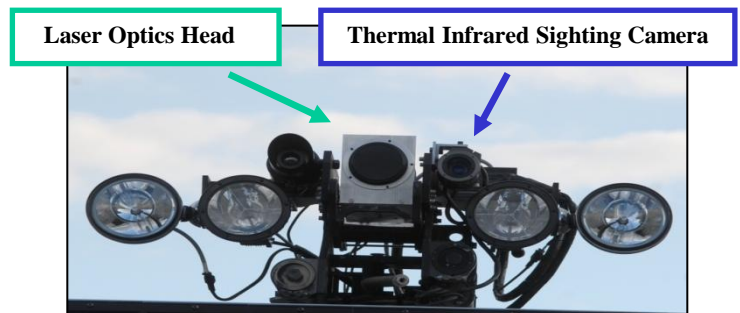
DSLAs mounted on a HMMWV
Official Department of Defense Photo

How Does It Work?

The DSLA is composed of three main parts: an integrated camera, a sound array device and a light array device. The integrated camera shows the operator where the light and sound array beams are directed and allows the operator to aim the beams at an approaching vehicle, vessel or individual.

The sound array beam is emitted by a Target High-Output Responder-16S acoustic projector and steered electronically so that the operator can aim it at a target without manually adjusting the device. The operator can vary the size of the sound beam from highly focused to a very wide, or "spread," pattern. Because the beam is highly directional, it concentrates the low-frequency acoustic energy, allowing the sound to penetrate vehicles, vessels and buildings, even in the presence of high background noise.

The light array device consists of a green laser disruptor and bright white lights. The laser disruptor beam is capable of continuous and pulsating modes of operation and is supplemented by two types of bright white lights: two enhanced search lights and two spot lights. The bright white lights are mounted on both sides of the laser disruptor projection lens.



Components of the DSLA
Official Department of Defense Photo

Distributed Sound and Light Array

Human Effects Testing

The development of the DSLA is leveraging years of previous research on acoustic hailing devices and optical distracters that are similar to the DSLA's sound and light array devices. This research has already established what levels of sound and light are harmful to the human eye and ear. To ensure that it can be used effectively and safely, the DSLA system is undergoing similar human effects and effectiveness testing. The energy emitted from acoustic and optical non-lethal weapons is non-kinetic, thus there is minimal risk of collateral damage from their use.

The Joint Non-Lethal Weapons Program continues to fund human effects and effectiveness research to better quantify the military usefulness of optical distracters and acoustic hailing devices. Future studies on the human effects of the DSLA will aid in design improvements and identification of operational safety guidelines.

In addition to human effects testing, all fielded acoustic hailing devices and optical distracters have undergone legal reviews to ensure compliance with obligations assumed by the U.S. under applicable treaties, customary international law and the law of armed conflict. Any new weapon, lethal or non-lethal, developed under the auspices of the U.S. Department of Defense is required to undergo a thorough review prior to fielding. Acoustic hailing devices and optical distracters are no exception.



The DSLA aims a focused laser and provides instructions to drivers at entry control points.

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System Evolution

The Applied Research Laboratory at The Pennsylvania State University in University Park, Pa., is developing the DSLA technology for the Department of Defense. In August 2009, the DSLA was demonstrated to officials from all the U.S. armed services.

Organizations Involved

The following organizations have participated in and plan continued support of non-lethal acoustic and optical distracter technology evaluations, effects characterizations, safety assessments and the development of relevant concepts of operation:

- Department of Defense
 - Joint Non-Lethal Weapons Program
 - U.S. Marine Corps
 - U.S. Army
 - U.S. Navy
- The Pennsylvania State University

Other government agencies, such as the Department of Homeland Security, which includes the U.S. Coast Guard and U.S. Customs and Border Protection, have shown interest in acoustical and optical non-lethal capabilities.



The tower mounted DSLA's non-lethal optical distracter can obscure an opposing driver's windshield and diminish an individual's range of visibility.

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